IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)

OAKLEY et al.   )

)

Serial No. 10/543,637   )

)   Group Art Unit: 1616

Filed: December 05, 2005   )

)   Examiner: Andriae M. Holt

For : Method for yield improvement in glyphosate-resistant legumes

DECLARATION

1.   I, Lutz Brahm, Dr.agr., citizen of the Federal Republic of Germany and residing at Am Hang 16, 67551 Worms, Germany, hereby declare as follows:

I am a fully trained Agronomist having studied Agriculture at the Justus-Liebig-University of Giessen, Germany, from 1987 to 1993. I received a Diploma Degree in 1993 by the Justus-Liebig-University of Giessen, Germany. In 1997, I received the doctorate degree (Ph.D.) by the Justus-Liebig-University of Giessen, Germany.

I joined BASF Aktiengesellschaft, 67056 Ludwigshafen, Germany, in 2006. Since then, I have been working in the field of crop protection. I have read and fully understood US application Ser. No. 10/543,637 and I am familiar with the subject-matter disclosed and claimed therein;

2.   I have read and fully understood the Office Action of March 31, 2009 and the references cited therein by the Examiner;

3.   The following observations are made by me.

4.   Supplementary Experimental Data

4.1   In order to provide further support for the claimed method and mixture, following additional test data are presented.

Soybeans were grown in 2006 at 7208 Rouse Road, Holly Springs, NC. The variety NK S52-U3 was planted at a seeding rate of 100 kg per ha. Row spacing was 100 cm. The trial was setup as randomized complete block design with 4 replications. Plot size was 18 m².

The active ingredients were used as formulations. The formulations were used in the product rates given below and in Table 1. The products were applied in a total spray volume of 140 l/ha.

Glyphosate was applied two times as Roundup Weathermax™ (540 g active per liter) at soybean growth stage 19 (BBCH) with a product rate of 1.78 l/ha. Pyraclostrobin was applied once at growth stage 19 (BBCH) as HEADLINE™ (250 g active per liter) with a product rate of 0.3 l/ha.

Grain yield was assessed (Table 1) by harvesting the plants in a plot and is expressed as kg per plot. The efficacy was calculated as % increase of yield in the treatments compared to the untreated control:

$$E = a/b-1 \cdot 100$$

a   corresponds to the grain yield of the treated plants in kg/ha and
b   corresponds to the grain yield of the untreated (control) plants in kg/ha

An efficacy of 0 means the yield level of the treated plants corresponds to that of the untreated control plants; an efficacy of 100 means the treated plants showed a yield increase of 100%.

The expected efficacies of the combinations of the active compounds were estimated using Colby's formula (Colby, S.R., Calculating synergistic and antagonistic

responses of herbicide combinations, Weeds, 15, pp. 20-22, 1967) and compared with the observed efficacies.

Colby's formula: $E = x + y - x \cdot y/100$

E   expected efficacy, expressed in % of the untreated control, when using the mixture of the active compounds A and B at the concentrations a and b

x   efficacy, expressed in % of the untreated control, when using the active ingredient A at the concentration a

y   efficacy, expressed in % of the untreated control, when using the active ingredient B at the concentration b
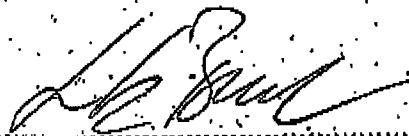
Table 1

Treatment	Product rate [l/ha]	Yield [kg/plot]	Observed efficacy [%]	Expected* efficacy [%]	Synergism [%]
Control	-	6.2			
Glyphosate	1.78	6.13	-1.1		
Pyraclostrobin	0.3	6.55	5.6		
Glyphosate + Pyraclostrobin	1.78 0.3	7.8	25.8	4.56	21.24

* according to Colby's formula

The results demonstrate that the efficacy in the combination ratios of the active compounds shown in table 1 is higher than the expected efficacy calculated using Colby's formula.

5. The undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1101 of Title 18 of the US-code and that such willful false statements may jeopardize the validity of the above-identified patent issued thereon.

Ludwigshafen, June 23, 2009.

(Lutz Brahm)

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